REMARKS

Applicant respectfully requests reconsideration and allowance of the subject application. Claims 1-31 are pending in this application.

35 U.S.C. § 102(e)

Claims 1-11, and 13-31 stand rejected under 35 U.S.C. §102(e) as being unpatentable over U.S. Patent No. 5,748,468 to Notenboom et al. (hereafter the "Notenboom reference" or "Notenboom").

Claim 1 of Applicant's Specification

Claim 1 recites:

"1. A method of reclaiming resources used by computer application programs executing on a computer, the method comprising:

identifying computer application programs executing on the computer;

assigning a priority value to each of the identified computer application programs, wherein the priority value is determined based on a plurality of characteristics of the identified computer application programs; and

automatically terminating the computer application program with the smallest priority value."

Claim 1 recites a method of assigning priority values to application programs that are executing on a computer so that resources can be reclaimed by terminating the application program with the smallest priority value. According to Applicant's specification:

> "The invention provides a *mechanism for terminating an application program* to reclaim resources, such as memory or processor resources, in a computer . . . Rather than merely terminating the least recently used application or the longest running application, a computer in accordance with the invention selects the application to terminate based on various characteristics associated with executing applications. After analyzing these various characteristics, the "best" application to terminate is selected and terminated. The selection and termination of the application is performed automatically, without requiring any input from the user . . ." (page 4 of Applicant's specification). (Emphasis added.)

The Notenboom reference, on the other hand does not disclose, teach, or suggest Applicant's elements of identifying computer application programs executing on the computer; assigning a priority value to each of the identified computer application programs, wherein the priority value is determined based on a plurality of characteristics of the identified computer application programs; and automatically terminating the computer application program with the smallest priority value, as will be discussed next.

The Notenboom reference

The Notenboom reference discloses a *co-processor* resource manager (PCRM) 110 and method by which *co-processor* resources (such as those resources shown on *co-processor* adapter card 50 of Fig. 2) are allocated to *co-processor* processing tasks (i.e., "nodes") *according to user set priorities* (column 3, lines 13-15).

Notenboom defines several of the terms used to describe the PCRM 110 and the Notenboom method. An "operation," in the Notenboom reference, is defined as "a function carried out by the *co-processor*" (column 5, lines 57-58). A

"resource," in the Notenboom reference, is defined as a "hardware device of the *co-processor* 44 which is utilized by nodes to perform operations" (column 6, lines 17-19). "Nodes" in the Notenboom reference,

> "are entities which are logically interconnected by data transfer to perform or implement operations" (col. 5, lines 59-63). "Nodes generally include processing tasks executable on the *co-processor* which implement operations, as well as host and co-processor devices (i.e., codecs, 70, 71, connectors 60-64, input/output ports of ASIC 74, etc.) which constitute sources or destinations of data used in operations" (col. 5, line 63-col. 6, line 1) (emphasis added).

Thus, "nodes" as defined by Notenboom are not "applications and/or application programs." The Notenboom reference itself explicitly distinguishes applications from nodes:

> "Applications 92 include software such as word processors, spreadsheets, communications programs, multi-media viewers, and many others" (col. 6, lines 65-67).
>
> . . .
>
> "Device drivers 98 respond to an application's request for an operation performable on co-processor 44 by requesting that a group of one or more nodes which implement the operation be loaded and executed by co-processor platform 94. Device drivers 98 issue requests to load and execute nodes . . ." (column 7, lines 22-28).

Notenboom's Fig. 4 further emphasizes that the PCRM 110 manages nodes and not application programs: the PCRM 100 is included in the DSP resource manager 100 while applications 92 are separated from the DSP layer of the PCRM 110 by intervening (intermediate) layers of device drivers 98, host operating system 96, and DSP resource manager 100. Likewise, in the text accompanying

Fig. 4, under "Co-processor Resource Management System Architecture," Notenboom discloses:

> "Architecture 90 comprises one or more applications 92 running on a host CPU 28 as a top layer, and a DSP platform 94 as a bottom layer . . . Requests by applications 92 for operations performable by co-processor 44 (Fig. 1) are passed through the intermediate layers of architecture 90 to DSP platform 94 at the lowest layer which carries out the operations. This layered structure provides signal processing services to upper layer applications and device drivers *while making the low-level DSP-hardware details invisible to the highest layer software applications*" (column 6, lines 49-61) (emphasis added).

In other words, since the Notenboom method is accomplished at the low-level DSP layer (see PCRM 110 in Fig. 4), the above-quoted assertion in the Notenboom reference that the "low-level DSP-hardware details" are "invisible to the highest level software applications" means that the PCRM 110 and the Notenboom method cannot perform any of the elements of Applicant's claim 1.

Further, the Notenboom method, as shown in Figs. 6A-6C and described in the accompanying text of the Notenboom reference, could not perform termination of application programs as recited in Applicant's claim 1. Notenboom does not disclose a method or mechanism for evicting an application 92. Instead, applications 92 in the Notenboom reference direct the device drivers 98 to request loading and execution of subject nodes, but if resources need to be freed, then the DSP platform 94 and device driver 98 that originally requested loading and execution of the subject nodes are queried for permission to evict the subject nodes. Only the subject nodes can be evicted, not the application(s) that directed the device drivers 98 to originally request loading of the subject nodes (see column 14, lines 26-42).

Hence, regarding claim 1, Notenboom does not disclose, teach, or suggest "identifying computer application programs executing on the computer" as does Applicant's claim 1. Notenboom does not disclose, teach, or suggest "assigning a priority value to each of the identified computer application programs, wherein the priority value is determined based on a plurality of characteristics of the identified computer application programs" as does Applicant's claim 1. Notenboom also does not disclose, teach, or suggest "automatically terminating the computer application program with the smallest priority value" as does Applicant's claim 1.

Since Notenboom does not disclose subject matter of Applicant's claim 1, Applicant respectfully requests that the 35 USC §102(e) rejection be removed and Applicant suggests that claim 1 is in condition for allowance.

Claims 14, 19, and 26

Independent claims 14, 19, and 26 contain subject matter similar to claim 1. Applicant respectfully points out that the Notenboom reference does not disclose, teach, or suggest the subject matter of claims 14, 19, and 26 as set forth above in the discussion with respect to claim 1.

Regarding claim 14, Applicant respectfully disagrees with the Office's characterization of col. 16, lines 25-30; col. 3, lines 35-40; and col. 6, 35-40 of the Notenboom reference. Notenboom discloses a user interface control for ranking operations (defined as functions of the co-processor) according to a user-selected order of priority responsive to user input (col. 16, lines 25-30), and discloses a PCRM to terminate one or more processing tasks (being performed by a co-processor) of lower priority to thereby free sufficient resources for a requested group of processing tasks (col. 3, 35-40), but does not disclose determining whether an application program is in a modal state. Notenboom discloses ranking

co-processor processing tasks according to service classes (col. 6, lines 35-40), but does not disclose providing a default response to an application program.

Regarding claim 19, Applicant respectfully disagrees with the Office's characterization of col. 3, lines 15-20; col. 6, lines 40-41; col. 3, lines 55-56; and col. 3, lines 38-41 of the Notenboom reference. The Notenboom PCRM provides services to applications (applications ask device drivers to request the loading and executing of processing tasks (col. 3, lines 15-20)). These PCRM services do not include identifying application programs. In Notenboom, the user is able to designate that particular operations (defined as functions of a co-processor) are to take precedence over others (col. 6, lines 40-41). Notenboom, however, does not disclose assigning priority values to application programs. The PCRM can prioritize resource allocation to processing tasks according to user preferences (col. 3, 55-56). Notenboom, however, does not disclose a PCRM that can prioritize application programs. Likewise, the PRCM can elect to terminate one or more processing tasks of lower priority to thereby free sufficient resources for the requested group of processing tasks (col. 3, lines 38-41). Notenboom, however, does not disclose terminating the application that called the processing task being terminated.

Regarding claim 26, Applicant respectfully disagrees with the Office's collective characterization of col. 1, lines 15-20; col. 3, lines 15-20; col. 6, lines 35-40 (as explained above); and col. 3, lines 35-40 (as explained above) of the Notenboom reference. In col. 3, lines 15-20, applications offload processing tasks to co-processors (see col. 1, lines 62-64). As explained above, the Notenboom method ranks co-processor processing tasks according to service classes and can terminate a processing task of lower priority. Notenboom, however, does not

disclose terminating the application program that requested a processing task via, e.g., a device driver.

Since the Notenboom reference does not disclose, teach, or suggest the subject matter of claims 14, 19, and 26, Applicant respectfully requests that the 35 USC §102(e) rejection of claims 14, 19, and 26 be removed and suggests that claims 14, 19, and 26 are in condition for allowance.

Claims 2-11, 13

Dependent claims 2-11, 13 contain all the language of independent claim 1 and additional subject matter. Since claims 2-11, 13 are dependent on an allowable independent claim, Applicant respectfully submits that claims 2-11, 13 are also in condition for allowance.

Claims 15-18

Dependent claims 15-18 contain all the language of independent claim 14 and additional subject matter. Since claims 15-18 are dependent on an allowable independent claim, Applicant respectfully submits that claims 15-18 are also in condition for allowance.

Claims 20-25

Dependent claims 20-25 contain all the language of independent claim 19 and additional subject matter. Since claims 20-25 are dependent on an allowable independent claim, Applicant respectfully submits that claims 20-25 are also in condition for allowance.

Claims 27-31

Dependent claims 27-31 contain all the language of independent claim 19 and additional subject matter. Since claims 27-31 are dependent on an allowable independent claim, Applicant respectfully submits that claims 27-31 are also in condition for allowance.

Rejection Under 35 U.S.C. § 103

The Office rejects claim 12 as being unpatentable over Notenboom in view of U.S. Patent No. 6,027,024 to Knowles. The Office rejects claims 2, 4, 15-18, 20, 21-22, and 28-29 as being unpatentable over Notenboom in view of U.S. Patent No. 5,790,785 to Klug.

Claim 2, 4, and 12 are dependent on independent claim 1; claim 15-18 are dependent on independent claim 14; claims 20 and 21-22 are dependent on independent claim 19; and claims 28-29 are dependent on independent claim 26. Claims 1, 14, 19, and 26 were rejected under 35 U.S.C. § 102(e) as being anticipated by the Notenboom reference. Applicants have shown that the 35 U.S.C. § 102(e) rejections of claims 1, 14, 19, and 26 should be removed, as discussed above. Combining the Notenboom reference with another reference, such as the Knowles reference or with the Klug reference docs not cure the deficiencies of the Notenboom reference as prior art for the Applicant's claims.

Accordingly, Applicants respectfully suggest that the 35 U.S.C. § 103(a) rejections of claim 2, 4, 12, 15-18, 20, 21-22, and 28-29 should also be removed and that these claims are also in condition for allowance.

CONCLUSION

Applicant respectfully suggests that claims 1-31 are in condition for allowance. Applicant respectfully requests reconsideration and issuance of the subject application. Should any matter in this case remain unresolved, the undersigned attorney respectfully requests a telephone conference with the Examiner to resolve any such outstanding matter.

Respectfully Submitted,

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